

day existence.

2. CONTRIBUTIONS OF MUSLIM SCIENTISTS:

MUHAMMAD BIN MUSA AL KHWARZIMI:

Made lasting contributions in the fields of Mathematics, Astronomy, Music, Geography and History. He composed the oldest works on Arithmetic and on Algebra. The oldest Mathematic book composed by him is "Kitab ul jama wat tafriq". He is the first person who used zero and wrote "Hisab ul jabr Wal Muqabla" which is conceived to be an outstanding work on the subject which included analytical solutions of linear and quadratic equations. In the field of Astronomy he compiled his own tables which formed the basis of later astronomical pursuits in both East and West. He also contributed in the field of geographical science by writing a noteworthy book Kitab ul surat al ard. in Arabic. His book " kitab al Tarik" is also a memorable work regarding history.

AL BERUNI:

Born in Afghanistan Beruni made original and important contributions to science. He is conceived to be the most prominent scientists of the Islamic world who wrote around 150 books on various significant subjects concerning human existence. These subjects include Mathematics, History, Archeology, Biology, Geology, Chemistry, Religion etc. He discussed the behaviour of earth, moon, and planets in his book "Qanoon Almasudi" which is also considered as an outstanding astronomical encyclopedia. He also discovered seven different ways of finding the directions of north and south and discovered mathematical techniques to determine exactly the beginning of the seasons. Another notable discovery he made was that the speed of light is faster than sound. His wide range of scientific knowledge is also revealed through his books " kitab al saidana" and "kitab al jawahar" dealing with medicine and the types of gems their gravity respectively. He was a prolific writer whose works showed his versatility as a scientist.

AL RAZI:

The famous philosopher and a notable surgeon of the Muslim world, Zakriya Al Razi was born in Ray near modern Tehran Iran. His eagerness for knowledge led him to the study of Alchemy and Chemistry, philosophy, logic, Mathematics and Physics. He was a pioneer in many areas of medicine and treatment of health sciences in general, and in particular he worked a lot in the fields of paediatrics, obstetrics and ophthalmology. Al razi was the first person to introduce the use of Alcohol for medical purposes and opium for the objective of giving anaesthesia to his patients. In the field of ophthalmology too Al razi gave an account of the operation for the extraction of the cataract and also the first scientist to discover the effect of the intensity of light on the eye. The modern studies confirm his understanding on the subject thus making him a

science. He is considered to be the founders of Medicine and also added his great efforts to the fields of Mathematics, Astronomy, Medicine, Chemistry, Philosophy, Palaeontology and Music. His most famous book is "Al Qannun" which brings out the features of human physiology and medicine. Sina is also considered as a father of the science of Geology on account of his invaluable book on mountains in which he discussed matters relating to earth's crust and gave scientific reasons for earthquakes. He is the author of 238 books which are fine instances of thoughts regarding various subjects in diverse ways.

JABIR BIN HAYAN:

Introduced experimental research in chemical science which immensely added its rapid development and made him the Father of Chemistry. He devised methods for preparation of important chemicals like hydrochloric acid, nitric acid, and white lead. Jabir's work also dealt with the refinement of metals, preparation of steel, dyeing of cloth and leather, use of manganese dioxide in glass making, distillation of vinegar to concentrate acetic acid. Jabir also explained scientifically two principal functions of chemistry, i.e., calcination, and reduction and registered a marked improvement in the methods of evaporation, sublimation, distillation and crystallization. He wrote more than 100 books which are one of the most outstanding contributions in the field of science especially the chemical sciences.

ABDUL HASSAN IBN AL HAITHAM:

One of the most outstanding Mathematicians, Physiologists, and Opticians of Islam. He contributed to the realms of medicine and philosophy. He wrote more than 200 scientific works on diverse subjects. Haitham examined the refraction of light rays through transparent objects including air and water. In fact he was the first scientist to elaborate two laws of reflection of light. He made a number of monumental discoveries in the field of optics, including one which locates retina as the seat of vision. His book on optics "Kitab Al Manazir" vividly shows his grip on the subject. He constructed a pinhole camera and studied formation of images. Due to his noteworthy contributions he is regarded as one of the prolific Muslim scientists of all times.

OMAR AL KHAYAM:

He was an outstanding Mathematician and Astronomer. He was also known as a poet, philosopher and a physician. He travelled to the great centres of learning of the era i.e. Samarkand, Bukhara, and Ispahan. He classified many algebraic equations based on their complexity and recognized thirteen different forms of cubic equation. He also classified algebraic theories of parallel lines. On the invitation of Sultan Jalal-ud-Din, he introduced the Jilali calendar which has an error of one day in 3770 years. He also developed accurate methods for determination of gravity. As a poet too, he is known for his Rubaiyat. He made great contributions in the development of mathematics and analytical geometry which benefitted Europe several years later.

NASIR UD DIN TUSI:

AL RAZI:

The famous philosopher and a notable surgeon of the Muslim world, Zakriya Al Razi was born in Ray near modern Theran Iran. His eagerness for knowledge lead him to the study of Alchemy and Chemistry, philosophy, logic, Mathematics and Physics. He was a pioneer in many areas of medicine and treatment of health sciences in general, and in particular he worked alot in the fields of paediatrics, obsterics and ophthalmology.

Al razi was the first person to introduce the use of Alcohol for medical purposes and opium for the objective of giving anaethseia to his patients.

In the field of ophthalmology too Al razi gave an account of the operation for the extraction of the catract and also the first scientist to discover the effect of the intensity of light on the eye. The modern studies confirm his understanding on the subject thus making him a great physician of all the times.

ABU ALI IBN E SINA:

Endowed with great powers of absorbing and retaning knowledge this Muslim scholar also made valuable contributions to the field of science. He is considered to be the founders of Medicine and also added his great efforts to the fields of Mathematics, Astronomy, Medicinial Chemistry, Philosophy, Palae ontology and Music.

His most famus book is "Al Qannun" which brings out the features of human physiology and medicine.

Sina is also considered as a father of the science of Geology on account of his invaluable book on mountains in which he discussed matters relating to earth's crust and gave scientific reasons for earthquakes. He is the author of 238 books which are fine instances of his thoughts regarding various subjects in diverse ways.

JABIR BIN HAYAN:

Introduced experimental research in chemical science which immensely added its rapid development and made him the Father of Chemistry. He devised methods for preparation of important chemicals like hydrochloric acid, nitric acid, and white lead.

Jabir's work also deal with the refinement of metals, preparation of steel, dyeing of cloth and leather, use of magnese dioxide in glass making, distillation of vinegar to concentrate acetic acid.

Jabir also explained scientifically two principle functions of chemistry, i.e., calcination, and reduction and registered a marked improvement in teh methods of evaporation, sublimation, distillation and crystallization

He wrote more than 100 books which are one of the most outstanding contributions in the field of science especially the chemical science.

ABDUL HASSAN IBN AL HAITHAM:

One of the most outstanding Mathematicians, Physiologists, and Opticians of Islam. He contributed to the relams of medicine and philosophy. He wrote more than 200 scientific works on diverse subjects.

Haitham examined the refraction of light rays through transparent objects including air and water.

Infact he was the first scientist to elaborate two laws of refelction of light

He made a number of monumental discoveries in the field of optics, including one which locates retina as the seat of vision. His book on optics "Kitab Al Manazir" vividly shows his grip on the subject.

He wrote more than 100 books which are one of the most outstanding contributions in the field of science especially the chemical sciences.

ABDUL HASSAN IBN AL HAITHAM:

One of the most outstanding Mathematicians, Physiologists, and Opticians of Islam. He contributed to the realms of medicine and philosophy. He wrote more than 200 scientific works on diverse subjects.

Haitham examined the refraction of light rays through transparent objects including air and water.

In fact he was the first scientist to elaborate two laws of reflection of light.

He made a number of monumental discoveries in the field of optics, including one which locates retina as the seat of vision. His book on optics "Kitab Al Manazir" vividly shows his grip on the subject.

He constructed a pinhole camera and studied formation of images. Due to his noteworthy contributions he is regarded as one of the prolific Muslim scientists of all times.

OMAR AL KHAYAM:

He was an outstanding Mathematician and Astronomer. He was also known as a poet, philosopher and a physician. He travelled to the great centres of learning of the era i.e. Samarkand, Bukhara, and Ispahan. He classified many algebraic equations based on their complexity and recognized thirteen different forms of cubic equation. He also classified algebraic theories of parallel lines. On the invitation of Sultan Jalal-ud-Din, he introduced the Jilali calendar which has an error of one day in 3770 years. He also developed accurate methods for determination of gravity.

As a poet too, he is known for his Rubaiyat. He made great contributions in the development of mathematics and analytical geometry which benefitted Europe several years later.

NASIR UD DIN TUSI:

Al Tusi was one of the greatest scientists, Mathematicians, Astronomers, Philosophers, Theologians and physicians of his time. He was a prolific writer and wrote many treatises on varied subjects like Algebra, Arithmetic, Trigonometry, Geometry, Logic, Metaphysics, medicine, ethics and Theology.

He served as a minister of Halaku Khan and persuaded him to establish an observatory and library after the destruction of Baghdad. He worked at the observatory and prepared precise tables regarding the motion of the planets. These are also known as "Tables of Khan".

ZIA UD DIN IBN BAITAR:

Was a famous botanist and pharmacopist of middle ages. Because of his intensive travels, he was able to discover many plant species. He wrote many books regarding his field of speciality and is always considered as a prominent scientist.